

## The Effects of Attractant Volume on Mosquito Collection Success Using Gravid Traps - Mike Hutchinson

- 1) Hypotheses
  - a) High volume -
    - i) Suction effect
    - ii) Larger odor plume
  - b) Low volume - better chance mosquito will get below the collection pipe
- 2) Design
  - a) Compared 4 volumes
  - b) Used the Reiter/Cummings gravid trap
  - c) Volumes
    - i) 2 liters - ½ gallon
    - ii) 4 liters - 1 gallon
    - iii) 6 liters - 1½ gallons
    - iv) 8 liters - 2 gallons
  - d) Used attractant of same age
  - e) Used new traps
  - f) Used sites with homogeneous habitat
  - g) Omitted trap data when it rained
  - h) Set traps at dusk
- 3) Attractant
  - a) 5lbs hay
  - b) ½ cup lactalbumin on the first round
  - c) Used about ½ cup of old solution when making new
  - d) Let sit for 2 weeks
  - e) Replaced hay every 2-3 weeks
- 4) Study site
  - a) 6 locations
  - b) Primarily sewage treatment plants
  - c) Set traps randomly
  - d) Rotated traps clockwise
- 5) Initial tests
  - a) High volume hypothesis
    - i) Suction
      - (1) Used probes to measure intake of air up the pipe
      - (2) Air velocity increases as volume of water increases
      - (3) Statistically significant
      - (4) Functionally significant???
    - ii) Odor plume increase - didn't check
  - b) Low volume hypothesis - lots of room to get under trap
- 6) Results
  - a) *Culex pipiens*
    - i) 2 liters worked best
    - ii) 8 liters was the worst
  - b) Similar results seen with *Culex restuans*
  - c) Increased suction was not a factor

(1) Combination of high levels of attractant and suction rippled the water which may have effected desire to oviposit

ii) Conclusions

(1) Using just 2 liters increases trap effectiveness by at least 30%

(2) Less work operationally

(3) Why - maybe mosquitoes fly back and forth before they land to oviposit

iii) Unanswered question - How low can you go?